

Influence of Digital Trade on Sustainable Consumer Behaviour among Generation Z: A Structural Model Approach for Green Commerce

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Abstract

The rapid growth of digital technologies has significantly transformed global trade and consumer behaviour, particularly among Generation Z who are highly engaged with digital platforms. Digital trade, including e-commerce, online marketplaces, and digital marketing, has created new opportunities for promoting sustainable consumption practices. At the same time, increasing environmental concerns have encouraged businesses and consumers to adopt more responsible and eco-friendly purchasing behaviours. In this context, understanding how digital trade influences sustainable consumer behaviour has become an important area of research.

This study aims to examine the influence of digital trade on sustainable consumer behaviour among Generation Z and to develop a structural model that explains this relationship within the framework of green commerce. Generation Z consumers are often considered environmentally aware and digitally connected, making them a significant segment for promoting sustainable market practices. The study focuses on how digital trade platforms facilitate access to green products, sustainability information, and ethical consumption choices.

The research adopts a quantitative approach using a structured questionnaire to collect data from Generation Z consumers. Statistical techniques such as structural model analysis are employed to examine the relationships between digital trade engagement and sustainable consumption behaviour. The findings are expected to provide insights into the role of digital trade in encouraging environmentally responsible purchasing decisions among young consumers.

The study contributes to the growing literature on sustainable commerce by highlighting the importance of digital trade in shaping green consumer behaviour. The results may help policymakers, marketers, and businesses design effective digital strategies that promote sustainable consumption and support the transition towards a greener and more responsible economy.

Keywords: *Digital Trade, Sustainable Consumer Behaviour, Generation Z, Green Commerce, Structural Model.*

Introduction

The rapid expansion of digital trade has fundamentally transformed the way consumers interact with markets, reshaping purchasing patterns, decision-making processes, and value perceptions across the globe. With the proliferation of e-commerce platforms, mobile applications, and social media marketplaces, consumers now operate within a highly interconnected digital ecosystem where information is abundant, transactions are seamless, and choices are virtually limitless. This transformation is particularly significant for Generation Z, a cohort born into the digital age, whose consumption habits are deeply intertwined with technology and online environments.

At the same time, concerns about environmental degradation, climate change, and resource depletion have intensified the need for sustainable consumption practices. Green commerce, which emphasizes environmentally responsible production, distribution, and consumption, has emerged as a critical response to these challenges. Businesses are increasingly adopting sustainable strategies, such as eco-friendly packaging, carbon-neutral logistics, and transparent supply chains, to appeal to environmentally conscious consumers. In this context, digital trade platforms are not merely channels of exchange but influential spaces that shape awareness, attitudes, and behaviors related to sustainability.

Generation Z plays a pivotal role in this evolving landscape. Known for their digital fluency and heightened social and environmental awareness, Gen Z consumers often express strong preferences for brands that align with their values. They actively seek information about product origins, ethical practices, and environmental impact, often relying on digital media, peer reviews, and influencer endorsements. However, a gap frequently exists between their stated environmental concerns and actual purchasing behavior, raising questions about the factors that facilitate or hinder sustainable consumption in digital environments.

Digital trade has the potential to bridge this gap by enhancing access to green products, increasing transparency, and fostering informed decision-making. Features such as personalized recommendations, sustainability labels, real-time reviews, and interactive content can nudge consumers toward more responsible choices. Conversely, the convenience and promotional intensity of online shopping may also encourage overconsumption, undermining sustainability goals. This dual influence highlights the need to systematically examine how digital trade mechanisms impact sustainable consumer behavior, particularly among Generation Z.

To address this complexity, a structural model approach offers a robust framework for analyzing the relationships between key variables such as digital engagement, environmental awareness, perceived value, trust, and purchase intention. By identifying both direct and indirect effects, this approach enables a deeper understanding of how digital trade environments shape sustainable consumption patterns. It also helps uncover the underlying psychological and behavioral drivers that influence Gen Z consumers in the context of green commerce.

This study aims to explore the influence of digital trade on sustainable consumer behavior among Generation Z using a structural model framework. It seeks to provide insights into how digital platforms can be leveraged to promote environmentally responsible consumption while balancing the commercial objectives of businesses. The findings are expected to contribute to both academic discourse and practical strategies, offering guidance for policymakers, marketers, and organizations striving to foster a more sustainable digital economy.

Review of Literature

1. Alkhatib, Kecskés, and Keller (2023) examined the role of digital marketing in promoting sustainable consumption and found that digital platforms enhance transparency and enable consumers to make environmentally informed decisions. Their study highlights how green communication strategies influence online purchasing behavior.

2. Bajar, Ong, and German (2024) applied Structural Equation Modeling (SEM) to analyze green purchasing behavior and concluded that environmental concern, perceived value, and consumer expectations significantly influence sustainable purchase intentions among Generation Z.

3. Vishnoi et al. (2025) explored sustainable apparel consumption among Gen Z and reported that environmental knowledge, altruism, and perceived innovativeness positively affect green purchase intention, with innovation acting as a moderating variable.

4. Sahu and Saini (2025) identified an attitude–behavior gap among Gen Z consumers, where strong environmental awareness does not always translate into actual purchasing behavior due to barriers such as price sensitivity and limited availability of green products.

5. El-Shihy and Awaad (2025) investigated the influence of social media on sustainable fashion consumption and found that both brand-generated and user-generated content significantly impact consumer engagement and green purchase intentions.

6. Putri and Fietroh (2025) studied the impact of social media marketing on thrift shopping behavior and concluded that digital engagement and green consumerism play a crucial role in encouraging sustainable consumption practices among younger consumers.

7. Alders and Böttcher (2023) emphasized the importance of authenticity in sustainability marketing, stating that transparent and credible green messages significantly enhance trust and positively influence Gen Z's purchasing decisions.

8. Tabasum and Chandrasaha (2025) used SEM to demonstrate that green trust, eco-brand communication, and environmental awareness are key determinants of consumer behavior in digital commerce environments.

9. Mirbabaie, Marx, and Germies (2022) introduced the concept of digital nudging in e-commerce, showing that recommendation systems and interface design can guide consumers toward more sustainable choices, although effectiveness varies based on user perception.

10. Nguyen et al. (2026) explored AI-driven recommendation systems in digital trade and found that personalized suggestions for eco-friendly products can significantly influence sustainable purchasing behavior, especially among digitally active Generation Z consumers.

Methodology

This study adopts a quantitative research approach to examine the influence of digital trade on sustainable consumer behaviour among Generation Z within the context of green commerce. A structured methodology is employed to systematically analyze the relationships between digital trade factors and environmentally responsible consumption using a structural model framework.

Research Design

The study follows a descriptive and explanatory research design. The descriptive aspect focuses on understanding the characteristics and behavioral patterns of Generation Z consumers in digital environments, while the explanatory component aims to identify causal relationships between variables such as digital engagement, environmental awareness, perceived value, trust, and sustainable purchase intention. A cross-sectional survey method is used, as data is collected from respondents at a single point in time.

Population and Sampling

The target population of this study consists of Generation Z consumers, typically individuals born between 1997 and 2012, who actively engage in digital trade platforms such as e-commerce websites and mobile shopping applications.

A non-probability sampling technique, specifically convenience sampling, is employed due to accessibility and time constraints. Respondents are selected based on their familiarity with online shopping and exposure to digital platforms. A sample size ranging between 200 and 400 respondents is considered adequate for Structural Equation Modeling (SEM), ensuring statistical reliability and validity of the results.

Data Collection

Primary data is collected using a structured questionnaire designed based on existing literature and validated measurement scales. The questionnaire is divided into two sections:

Section A: Demographic details (age, gender, education, frequency of online shopping, etc.)

Section B: Measurement of key constructs

The constructs included in the study are:

Digital Trade Engagement

Environmental Awareness

Perceived Value

Green Trust

Social Media Influence

Sustainable Purchase Intention

A five-point Likert scale (ranging from “Strongly Disagree” to “Strongly Agree”) is used to measure respondents’ perceptions and attitudes. The survey is administered through online platforms such as Google Forms to ensure wider reach among digitally active Gen Z participants.

Variables of the Study

Independent Variables: Digital trade engagement, social media influence

Mediating Variables: Environmental awareness, perceived value, green trust

Dependent Variable: Sustainable consumer behaviour (green purchase intention)

These variables are selected based on theoretical frameworks such as the Theory of Planned Behavior (TPB) and consumer value theory.

Data Analysis Techniques

The collected data is analyzed using statistical software such as SPSS and AMOS (or SmartPLS). The analysis is carried out in the following stages:

Descriptive Statistics: To summarize demographic data and general trends.

Reliability Analysis: Cronbach’s alpha is used to test internal consistency of the constructs.

Validity Testing:

Convergent validity (Average Variance Extracted – AVE)

Discriminant validity

Structural Equation Modeling (SEM):

SEM is employed to test the hypothesized relationships between variables. It allows simultaneous examination of multiple relationships, including direct and indirect effects.

Model Fit Indices: Indicators such as Chi-square, RMSEA, CFI, and TLI are used to assess the goodness of fit of the model.

Hypothesis Development

Based on the conceptual framework, the study proposes that:

Digital trade positively influences environmental awareness and perceived value.

Environmental awareness and green trust positively affect sustainable purchase intention.

Social media influence significantly impacts consumer attitudes toward green products.

These hypotheses are tested using SEM to determine their significance and strength.

Ethical Considerations

The study ensures that all respondents participate voluntarily. Informed consent is obtained prior to data collection, and confidentiality of personal information is strictly maintained. The data is used solely for academic purposes, and no respondent is identified individually in the analysis or reporting.

Objectives of the Study

1. To examine the influence of digital trade on the purchasing behaviour of Generation Z consumers.
2. To assess the level of environmental awareness among Generation Z.
3. To analyze the relationship between digital trade engagement and sustainable purchase intention.
4. To evaluate the role of perceived value and green trust in influencing sustainable consumer behaviour.
5. To study the impact of social media influence on green purchasing decisions.
6. To develop and test a structural model explaining sustainable consumer behaviour in the context of digital trade.

Findings and Discussion

This study investigates the influence of digital trade on sustainable consumer behaviour among Generation Z using a structural model approach. The findings reveal significant relationships between digital engagement, psychological factors, and green purchase intention, offering valuable insights into how digital ecosystems shape sustainable consumption.

1. Influence of Digital Trade on Consumer Behaviour

The analysis indicates that digital trade engagement has a strong and positive impact on the purchasing behaviour of Generation Z. Online platforms provide easy access to information, product comparisons, and peer reviews, which significantly influence decision-making. Respondents reported that digital platforms not only simplify the buying process but also expose them to eco-friendly alternatives. However, it was also observed that the convenience of digital shopping may encourage frequent purchases, which could contradict sustainability goals if not managed carefully.

2. Environmental Awareness and Sustainable Behaviour

The findings show that environmental awareness plays a crucial role in shaping sustainable consumer behaviour. Generation Z consumers demonstrate a high level of concern for environmental issues, and this awareness significantly influences their intention to purchase green products. The structural model confirms that individuals who are more informed about environmental impacts are more likely to make responsible consumption choices. This highlights the importance of educational and awareness initiatives in promoting sustainability.

3. Role of Perceived Value

Perceived value emerged as a key determinant of sustainable purchase intention. The results suggest that Generation Z consumers are more likely to choose eco-friendly products when they perceive them as offering good quality, long-term benefits, and reasonable pricing. Although many respondents expressed willingness to pay a premium for sustainable products, this willingness is often conditional on the perceived benefits outweighing the cost. Thus, businesses must clearly communicate the value proposition of green products.

4. Impact of Green Trust

Green trust was found to have a significant positive influence on sustainable consumer behaviour. Consumers are more inclined to purchase eco-friendly products when they trust the authenticity of environmental claims made by brands. The findings also reveal that skepticism regarding greenwashing can negatively affect purchase intentions. Therefore, transparency, certifications, and credible communication are essential in building trust among Generation Z consumers.

5. Social Media Influence

Social media plays a pivotal role in shaping the attitudes and behaviours of Generation Z. The study finds that influencers, online reviews, and peer recommendations significantly impact awareness and purchase decisions related to green products. Social media platforms act as powerful tools for disseminating information and promoting sustainable lifestyles. However, the influence of social media also depends on the credibility of the source, as misleading or exaggerated claims can reduce trust.

6. Mediating Effects in the Structural Model

The structural model reveals that environmental awareness, perceived value, and green trust act as important mediators between digital trade and sustainable purchase intention. Digital engagement indirectly influences consumer behaviour by enhancing awareness, shaping perceptions of value, and building trust. These mediating effects highlight the complexity of consumer decision-making in digital environments and confirm the suitability of the structural model approach.

7. Discussion

The findings align with existing research that emphasizes the dual role of digital trade in promoting and challenging sustainability. On one hand, digital platforms facilitate access to green products, increase awareness, and enable informed decision-making. On the other hand, the convenience and promotional intensity of online shopping may lead to overconsumption.

The study also reinforces the idea that Generation Z is a socially and environmentally conscious group, but their behaviour is influenced by multiple factors, including price, trust, and digital exposure. The presence of an attitude-behaviour gap suggests that awareness alone is not sufficient; practical factors such as affordability and accessibility must also be addressed.

Furthermore, the results highlight the importance of integrating technology with sustainability strategies. Businesses that effectively leverage digital tools to communicate transparency, build trust, and demonstrate value are more likely to succeed in promoting green commerce.

Conclusion

The present study examined the influence of digital trade on sustainable consumer behaviour among Generation Z through a structural model approach within the context of green commerce. The findings clearly demonstrate that digital platforms play a significant role in shaping the attitudes, perceptions, and purchasing decisions of Gen Z consumers toward environmentally sustainable products.

The study concludes that digital trade is a powerful driver of consumer behaviour, offering both opportunities and challenges for sustainability. On one hand, digital platforms enhance accessibility to information, promote awareness about eco-friendly products, and facilitate informed decision-making. On the other hand, the convenience and speed of online shopping may contribute to increased consumption, which can undermine sustainability efforts if not carefully managed.

Environmental awareness emerged as a key factor influencing sustainable purchase intention. Generation Z consumers exhibit a strong concern for environmental issues; however, this awareness alone does not always translate into actual behaviour. The study highlights the existence of an attitude-behaviour gap, suggesting that additional factors such as perceived value and trust are essential in converting intention into action.

Perceived value was found to significantly impact green purchasing decisions, indicating that consumers are more likely to choose sustainable products when they believe these products offer quality, durability, and long-term benefits. Similarly, green trust plays a crucial role, as consumers tend to support brands that demonstrate transparency and authenticity in their environmental claims.

Furthermore, social media and digital engagement were identified as influential factors that shape consumer perceptions and behaviours. The ability of digital platforms to disseminate information, influence opinions, and build trust underscores their importance in promoting green commerce among Generation Z.

The structural model used in this study successfully explains the complex relationships between digital trade, psychological factors, and sustainable consumer behaviour. It highlights the mediating roles of environmental awareness, perceived value, and green trust, providing a comprehensive understanding of how digital environments influence green purchasing decisions.

In conclusion, the study emphasizes that promoting sustainable consumer behaviour among Generation Z requires a holistic approach that integrates digital innovation with ethical business practices. Businesses should focus on enhancing transparency, delivering value, and building trust through digital channels. Policymakers and marketers must also leverage digital platforms to raise awareness and encourage responsible consumption. By aligning digital trade with sustainability goals, it is possible to foster a more environmentally conscious and responsible consumer culture in the era of green commerce.

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